Compliance and protein intake from a milk-based drink during a 3-day trial in patients at nutritional risk

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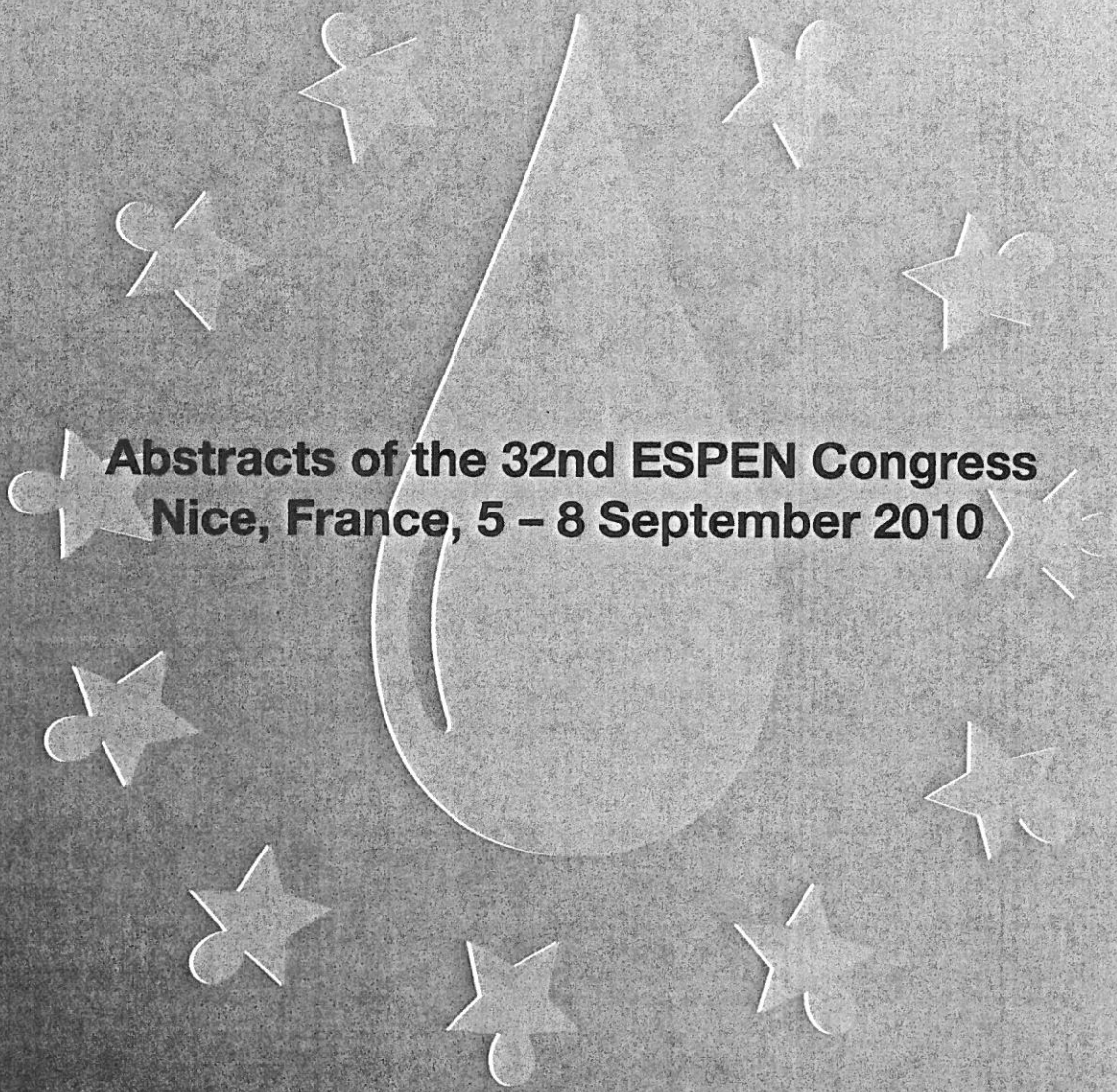

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PP130
EVALUATION OF AMARANTH PROTEIN QUALITY IN AN EXPERIMENTAL ANIMAL MODEL

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Rationale: The biological value of proteins is the decisive factor in the effect of supplemented proteins on nitrogen balance. Amaranth is considered acceptable for the gluten-free diet. The protein content of Amaranth grain is higher compared to common grains apart from soybeans. The purpose of the study was to prepare a protein with high biological value from the plant (amaranth) and compare it with casein. We observed effect on the growth and nitrogen metabolism of rats.
Methods: Fourteen male Wistar rats (45 day age) were separated into 2 diet groups of 7 animals each. A mixture of amaranth protein with an autolysate of yeast diet (A-Y diet) (1:1) was tested in comparison with casein protein. Daily dietary intakes and body weight (BW) of the rats were investigated over 5 weeks. Biochemical parameters of nitrogen metabolism in blood and urine and total nitrogen in the stercus of the terminal small intestine and faeces were determined.
Results: See the table.

Group	A-Y diet	CASEIN
BW beginning (g)	215±8	205±14
BW end (g)	392±20	360±38
Nitrogen balance	0.79±0.05	0.81±0.04
Nitrogen losses (g)	0.29±0.07	0.26±0.04
Total protein in plasma (g/l)	62.71±1.19	65.03±3.53
Albumin in plasma (g/l)	40.31±0.89	41.25±1.55
Urea in plasma (mmol/l)*	7.07±1.3	9.27±0.76
Creatinine in plasma (mmol/l)	27.57±1.4	28±3.6

Values are presented as mean±SD. *P < 0.05.

Conclusion: Amaranth protein contains a high amount of the essential amino acid lysin (3 times higher than cereals and legumes). In comparison with casein, our tested A-Y diet had a similar effect on the growth curves and nitrogen metabolism. Statistically significant changes were not detected in the comparisons of both diet groups, except urea in plasma. This exchange can be explained by lower oxidative deamination of aminoacids in A-Y diet.
Supported by research project MZO 00179906 and grant MPO CZ FI-IM5/098.

Disclosure of Interest: None declared

PP131
FATTY ACID COMPOSITION OF HUMAN MILK OF MOTHERS FROM THE CZECH REPUBLIC

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Rationale: A sufficient supply of long-chain polyunsaturated fatty acids (PUFA) and especially eicosapentaenoic (EPA) and docosahexaenoic acid (DHA) in early life is an important factor for the development of the brain and its functions. The PUFA composition of human milk varies considerably among different countries and is largely dependent on maternal diet and body stores. The aim of this study was to determine the fatty acid composition of human milk in the Czech Republic as a basis for consideration of a possible nutritional supplement recommendation.
Methods: Samples of human milk were obtained from mothers after the 1st, 3rd, 6th and 9th month of lactation. Fatty acids were extracted, transmethylated and their composition was determined using capillary gas-liquid chromatography. The results are expressed as the mean±SD or the median (interquartile range) of molar percentage.
Results: During the lactation period, the only significant changes were a decrease in dihomo-gamma-linolenic acid (0.382±0.065 to 0.260±0.058) and an increase in myristic acid (7.34±2.18 to 11.0±2.16) during the whole nine month period. The overall fatty acid composition is presented in the Table. The molar percentage of long chain n-3 fatty acids (EPA+DHA) was found to be only 0.2%, which is rather low compared to other populations.

Table: The median (interquartile range) of molar percentage of fatty acid groups

Saturated fatty acids	51.7 (48.7; 55.4)
Monounsaturated fatty acids	34.9 (32.6; 37.2)
Polyunsaturated fatty acids n-6	12.6 (10.5; 14.6)
Polyunsaturated fatty acids n-3 (EPA+ DHA)	0.20 (0.17; 0.25)

Conclusion: The EPA and DHA contents in the samples of milk obtained from Czech mothers were low compared to other populations. An additional supplementation of these fatty acids to late pregnant and lactating women should be recommended.
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Disclosure of Interest: None declared

PP132
COMPLIANCE AND PROTEIN INTAKE FROM A MILK-BASED DRINK DURING A 3-DAY TRIAL IN PATIENTS AT NUTRITIONAL RISK

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Rationale: Studies have shown the clinical benefit of nutritional supplements in patients at nutritional risk, but compliance is often low. In particular, protein intake is often inadequate in patients at nutritional risk. The aim of this study was to determine compliance and total protein intake from drinks with varying protein content.
Methods: Patients (N = 20) at nutritional risk (NRS-2002) were randomised and single-blinded to receive 3 x 200 g daily of either a milk-based 5.7% (g protein) Protin® Standard (PS) drink or a milk-based 10.2% (g protein) Protin® Plus (PP) drink for three days (Arla Foods, Denmark). PP consisted of Protin® Standard to which whey (LACPRODAN DI-9224®, Arla Foods, Denmark) had

been added. Intake was weighed. The Mann-Whitney test was used to evaluate statistical significance and results are presented as median (IQR).

Results: Patients were included from gastrosurgery (n = 10), infectious medicine (n = 5) and cardiology (n = 5) (12/8 male/female; 59 (49–66) years; BMI 23.1 (21.5–25.7) kg/m^2; 4 cancer). Median intake of protein was four times higher from PP than from PS ($P < 0.05$; Table). This was due to both the higher protein content and a non-significant higher intake of 1187 (641–1711) g versus 522 (154–1358) g protein from the PP and PS drink, respectively.

Table. Total protein intake from the drink during the 3-day trial

	Protein intake (g)
Protin® Standard (5.7% protein), n = 10	30 (9–77)
Protin® Plus (10.2% protein), n = 10	121 (65–175)

Conclusion: Protin® Plus with added whey protein improved compliance and protein intake. This may be of clinical benefit among patients at nutritional risk with inadequate protein intake.

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PP133

THE NUTRITIONAL CARE PROCESS: A CROSS-SECTIONAL STUDY EMPHASIZING NUTRITION INFORMATION IN DANISH PATIENT RECORDS

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Rationale: In 2010 a Danish quality insurance model will be introduced in all hospitals including the nutritional care process (NCP): Screening, plan and monitoring according to ESPEN guidelines.

The aim of this study was to investigate if all departments in a Danish university hospital fulfill criteria's for NCP, and to evaluate the quality of nutrition screening (NRS 2002) in patient records against that of trained nutrition teams.

Methods: A cross-sectional study including all hospitalized patients (>3 days of admittance) at a randomly selected day. Patient records (audit of NCP), were included. Nutrition teams from each department including nurses, dieticians and doctors, made audits (65 persons).

Results: A total of 286 patients (record audits) were included. Overall 56% of the patients were screened by the staff, and of these 25% were found to be at nutritional risk. However, 48% were at risk according to the audit team ($p < 0.005$), but more than ninety percent agreement of risk scores. Only one third of patients found at risk by the audit teams also had a nutrition plan. Requirements (energy and protein) were stated in 21% and 19% of records respectively. Nutrition registration was documented in 38% of records in patients who were found at nutritional risk. Tube feeding was prescribed more often in patients at nutritional risk ($p < 0.009$). Large differences in quality of NCP were seen between the departments.

Conclusion: Only a few departments fulfill the criteria's of NCP. The trained multidisciplinary nutrition teams found more patients at nutritional risk. Despite screening for nutrition risk, only minor had nutrition plans.

Disclosure of Interest: None declared

PP134

THE NUTRITIONAL CARE PROCESS: A CROSS-SECTIONAL STUDY EMPHASIZING PATIENT INTERVIEWS AND 24-HOUR DIET RECALL

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Rationale: In 2010 the Danish Healthcare Quality Programme will be introduced in all hospitals including the nutritional care process (NCP): Screening, plan and monitoring according to ESPEN guidelines.

The aim was to evaluate the quality of NCP by patient interviews and energy and protein intake by 24-hour diet recall interviews.

Methods: A cross-sectional study including all hospitalized patients (>3 days of admittance) at a randomly selected day. Nutrition teams (65 persons) including nurses and doctors, performed patient interviews. Dieticians made 24-hour diet recall interviews.

Results: A total of 203 patient interviews and 184 diet recalls were included. Weight loss within three months was acknowledged in 52% (mean 6.9 kg). Information about nutrition was to a higher degree given to nutrition risk patients ($p < 0.001$). Patients at nutritional risk were more often encouraged to eat than non risk patients ($p < 0.003$). In patient opinion 52% had a food intake less than normal within the past week, 16% less than half, and 12% less than one fourth. Lack of appetite, nausea and nil by mouth were most common reasons. Food registration had been done in 25% of the patients. In 24-hour nutrition intake recall interviews, 48% of patients had less than 75% of their energy-requirements (67% for protein).

Conclusion: Despite standards for NCP, the quality of nutrition care is far from sufficient, including patient intake and monitoring.

Disclosure of Interest: None declared